II. AMENDMENTS TO CLAIMS AND LISTING OF CLAIMS

1-6. Canceled

7.(currently amended) Sensor for the measurement of tissue perfusion ~~[according to claim 1]~~ where a fluid or gaseous tracer is being supplied ~~via~~ from a tracer source via a reservoir (4) to the tissue, the perfusion and of which is to be measured, and detected by a detection device via a detection cavity (5) comprising ~~characterized in that said sensor comprises~~ :

~~- first means such that the supply of tracer from~~ said reservoir (4) ~~to the surrounding tissue takes place via a spatially extended first area(14', 18)~~ having a reservoir wall with a tracer-permeable reservoir wall portion that permits tracer to be supplied from the reservoir to ~~the~~ surrounding tissue, ~~takes place via a spatially extended first area (14', 18); and~~

~~- second means~~ said detection cavity having a detection cavity wall having a tracer-permeable detection cavity wall portion , said tracer-permeable reservoir wall portion and the tracer-permeable detection wall portion respectively, communicating with the surroundings, such that a part of the tracer ~~molecules~~ leaving said reservoir (4) can arrive at said detection cavity (5) ~~via a spatially extended second area (13, 15')~~ , the reservoir and the detection cavity are mutually interspaced, elongated cavities and the tracer-permeable reservoir wall portion and the tracer permeable detection cavity wall portion are elongated side wall portions.

8 (Currently amended) Sensor according to claim 7, ~~characterised in that said first means comprises a~~ wherein said tracer-permeable reservoir wall portion ~~barrier (3, 14), the~~ dimensions ~~of which~~ can be varied and that said ~~second means comprises a~~ tracer-permeable detection cavity wall portion ~~barrier (3,15), the~~ dimensions ~~of which~~ can be varied~~, such that said variations of said dimensions results in variations of the size and shape of said spatially extended first and second areas according to the individual application~~.

9. (Currently amended) Sensor according to claim 8, ~~characterised in that~~ wherein said reservoir (4) communicates partly with said surrounding tissue through a spatially extended tracer-permeable barrier (3), having a first surface (18) which forms ~~said~~ a first area, and partly with said detection cavity (5) through the same spatially extended tracer permeable barrier (3), having a second surface (13) which forms ~~said~~ a second area , said tracer-permeable barrier is a common permeable wall for said reservoir and said detection cavity, said detection cavity wall is distinct from said common permeable wall, and said reservoir wall is distinct

from said common permeable wall .

10. (Currently amended) Sensor according to claim 8, ~~characterised in that~~ wherein said reservoir (4) communicates with said surrounding tissue through a spatially extended tracer-permeable barrier (14), a first surface (14') of which forms ~~said~~ a first area, and partly with said detection cavity (5) via said tissue and through another spatially extended tracer-permeable barrier (15), a second surface (15') of which forms ~~said~~ a second area.

11. (Currently amended) Sensor according to claim 8, ~~characterised in that~~ wherein said reservoir (4) and said detection cavity (5) are separated by a barrier (3, 19), and ~~that~~ the reservoir (4), barrier (3, 19) and cavity (5) are built together to form a longitudinal sensor.

12. Cancelled

13. (Currently amended) Sensor according to ~~any of the~~ claims ~~7 to~~ 11, ~~characterised in that~~ wherein said reservoir (4), said detection cavity (5) and said spatially extended tracer-permeable barriers (3, 14, 15) are located between one of the large surfaces of a tracer-impermeable panel or disc (17) and the surface (20) of the skin or organ of a patient, the perfusion of the surface layers of which skin or organ is to be measured, and with said longitudinal axis 11 extending substantially parallel with said large surface of the panel or disc (17), such that said spatially extended tracer-permeable barriers (3, 14, 15) are partly in contact with the surface of the skin or organ, and such that tracer can move from said reservoir (4) into said skin or organ and either from here into said detection cavity (5), or directly from said reservoir (4) into said detection cavity (5).

14. (Currently amended) Sensor according to ~~any of the~~ claims ~~7 to~~ 11, ~~characterised in that~~ wherein a series of said reservoir (4), said detection cavity (5) and said tracer-permeable barriers (3, 14, 15) are placed in side-by-side relationship with each other to cover a larger area of tissue.

15. (Currently amended) Sensor according to claim 14, ~~characterised in that~~ wherein said series of reservoirs (4), detection cavities (5) and tracer-permeable barriers (3, 14, 15) are located along one of the large sides of said panel or disc (17), such that they cover a substantial part of said side, and such that parts of said tracer-permeable barriers (3, 14,

15) can be brought into contact with the surface of the skin or organ of the patient.

16. (Currently amended)Sensor according to claims 13 or 15, ~~characterised in that~~ wherein said panel or disc (17) on the side facing the surface (20) of the skin or organ is provided with a pattern of partially open channels which can be connected to a vacuum source.

17-26 (withdrawn as non-elected)

27. (New) Sensor for the measurement of tissue perfusion where a fluid or gaseous tracer is being supplied from a tracer source via a reservoir (4) to the tissue, the perfusion of which is to be measured and detected by a detection device via a detection cavity (5), comprising:

first means such that the supply of tracer from said reservoir to the surrounding tissue takes place via a spatially extended first area ;

second means such that a part of the tracer molecules leaving said reservoir can arrive at said detection cavity via a spatially extended second area ;

said first means comprises a tracer-permeable barrier, the dimensions of which can be varied

said second means comprises a tracer-permeable barrier , the dimensions of

which can be varied, wherein said variations of said dimensions results in variations of the size and shape of said spatially extended first and second areas according to the individual application;

said reservoir and said detection cavity are separated by a barrier ;

and

the reservoir, barrier and cavity are built together to form a longitudinal sensor.

28. (New) Sensor according to claim 27 wherein said reservoir, said detection cavity and said spatially extended tracer-permeable barriers are located between one of the large surfaces of a tracer-impermeable panel or disc and the surface of the skin or organ of a patient, the perfusion of the surface layers of which skin or organ is to be measured, and with said longitudinal axis extending substantially parallel with said large surface of the panel or disc, such that said spatially extended tracer-permeable barriers are partly in contact with the surface of the skin or organ, and such that tracer can move from said reservoir into said skin or organ and either from here into said detection cavity, or directly from said reservoir into said detection cavity.

29. (New) Sensor according to claim 27 wherein a series of said reservoir, said detection cavity and said tracer-permeable barriers are placed in side-by-side relationship with each other to cover a larger area of tissue.

30. (New) Sensor according to claim 14, wherein said series of reservoirs, detection cavities and tracer-permeable barriers are located along one of the large sides of said panel or disc, such that they cover a substantial part of said side, and such that parts of said tracer-permeable barriers can be brought into contact with the surface of the skin or organ of the patient.

31. (New)Sensor according to claim 28, wherein said panel or disc on the side facing the surface of the skin or organ is provided with a pattern of partially open channels which can be connected to a vacuum source.